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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,368	04/19/2004	Jian-Choug Doong	T-1313	4872

802 7590 11/03/2006

PATENTTM.US
P. O. BOX 82788
PORTLAND, OR 97282-0788

EXAMINER	
YANG, CLARA I	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/828,368	DOONG ET AL.	
	Examiner	Art Unit	
	Clara Yang	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17* is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 April 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s), and no new matter should be entered:

- Claim 3: The light signal transmitting circuit, the light signal receiving circuit, and the signal amplifier.
- Claim 4: The sound signal transmitting circuit, the sound signal receiving circuit, and the signal amplifier.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to due to minor informalities:

- Fig. 1: "Power" is misspelled (see AC power supply circuit 24). In addition, the two-headed arrow (i.e., ↔) should be a single-headed arrow (i.e., ←) located between activating signal receiving circuit 12 and activating signal transmitting circuit 22 to

indicate that activating signal transmitting circuit 22 is sending an activating signal to activating signal receiving circuit 12. The examiner also suggests adding a device, such as a cellular phone or a remote controller that is sending a remote control signal to electromagnetic transceiver 25.

- Fig. 3: "Power" is misspelled (see AC power supply circuit 24).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

- Page 5, lines 13-15: The sentence "Based on such a condition, the AC power supply circuit (24) is connected to the AC power source to acquire the operating voltage thus being the stand-by mode" is not in idiomatic English.

- Page 6, lines 2-4: Insert a comma after "wakes the power supply circuit (14) up".

Appropriate correction is required.

Claim Objections

4. Claims 2 and 17 are objected to because of the following informalities:

- Claim 2: In the limitation concerning the activating signal receiving circuit, change "a signal amplifier having an input terminal connected to the main control circuit and having an output terminal connected to a second induction coil" to "a signal amplifier having an output terminal connected to the main control circuit and having an input terminal connected to a second induction coil" because, as shown in Fig. 1, the applicant teaches that induction coil 10 is connected to signal amplifier 122's input, and main control circuit 11 is connected to signal amplifier 122's output (see paragraph [0024]).

- Claim 2: In the specification and Fig. 1, the application refers to induction coil 121 as the first induction coil and induction coil 222 as the second induction coil. To maintain consistency and avoid confusion, the examiner suggests changing claim 2 as follows:

  The combination electrical lock device as claimed in claim 1, wherein the activating signal receiving circuit of the electrical lock has a signal amplifier having...an input terminal connected to a first induction coil;

  wherein the activating signal transmitting circuit of the control server has a magnetic field generating circuit having...an output terminal connected to a second induction coil; and

  wherein the electrical lock is then activated when the first induction coil detects the static magnetic field generated by the magnetic field generating circuit upon the control server receiving the remote signal.

- Claim 17: Change "a first electromagnetic signal transceiver" in line 13 to "a second electromagnetic transceiver".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Wenkman et al. (WO 00/77330 A1).

Referring to claim 1, Wenkman teaches a system, as shown in Figs. 2 and 7, comprising (a) a control server formed by building network 18, local controller 20 (i.e., a server control circuit), switch 23, AC power signal 24, primary winding 26, card reader 62, and input/output (I/O) lines 22 (see page 8, lines 1-6; page 10, lines 30-34; and page 11, lines 1-20); and (b) lock mechanism 47 (i.e., an electrical lock) formed by solenoid 40 (i.e., a main control circuit that controls pin 42), secondary winding 34, rectifier 36, filter capacitor 38, and pin 42 (see page 8, lines 15-33). Wenkman teaches that local controller 20 connects primary winding 26 to AC power signal 24 via switch 23 in order to activate lock mechanism 47 by transmitting a power signal, which functions as an activating signal (see page 8, lines 4-6 and 10-21; and page 11, lines 16-20); thus switch 23, AC power signal 24, and primary winding 26 form an activating signal transmitting circuit that outputs an activating signal to activate lock mechanism 47. In addition, per Wenkman, building network 18 is a power line communication network (see page 7, lines 24-26); thus building network 18 is an AC power supply circuit connected to local controller 20 to supply an operating voltage for local controller 20. And as described by Wenkman, card reader 62 is an electromagnetic signal transceiver connected to local controller 20 to receive a key code (i.e., remote control signal) from a transponder key card 64 (see page 10, lines 30-34 and page 11, lines 1 and 16-20). Furthermore, Wenkman teaches that lock mechanism 47's secondary winding 34, rectifier 36, and filter capacitor 38 form both an activating signal receiving circuit and a power supply circuit since local controller 20's activating signal is a power signal (see page 8, lines 4-6 and 10-21; and page 11, lines 16-20). Consequently, lock

mechanism 47's power is activated when lock mechanism 47 receives the activating signal from the control server.

Referring to claim 13, Wenkman's method comprises (a) local controller 20 receiving transponder key card 64's key code via card reader 62 (see page 10, lines 30-34 and page 11, lines 16-20); (b) local controller 20 issuing a power signal (i.e., an activating signal) to lock mechanism 47 (see page 8, lines 1-21 and page 11, lines 16-30); and (c) solenoid 40 activating based on the reception of the activating signal (see page 8, lines 1-21 and page 11, lines 16-30).

Regarding claim 14, Wenkman teaches that lock mechanism's secondary winding 34 receives AC power from primary winding 26 via induction (see page 8, lines 4-16). Wenkman's power signal is a static magnetic field because (1) the applicant teaches that a static magnetic field is generated by a magnetic field generating circuit and an induction (see page 5, lines 19-23), (2) a magnetic field is that part of the electromagnetic field that exists when there is a changing electric field caused by the movement of an electrically charged object, as in an electric current, and (3) Wenkman teaches an AC power signal 24 and primary winding 26 generating an inductive coupling field (see page 8, lines 10-13).

7. Claims 1 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Rodenbeck et al. (US 6,535,136).

Referring to claim 1, as shown in Fig. 1, Rodenbeck's system comprises (1) locking mechanism 14, which is an electrical lock since it unlocks or locks upon receiving an unlock/relock signal 34 (see Col. 5, lines 5-9 and Col. 6, lines 10-14), and (2) proximity card detection system 10 (i.e., a control server) (see Col. 5, lines 5-9). Rodenbeck teaches that proximity card detection system 10 comprises (a) wake-up circuit 26, which includes detection device 38, that is a server control circuit and controls reader electronics 24 and access control

electronics 22 by supplying power when appropriate (see Col. 5, lines 12-20 and 60-67; Col. 6, lines 1-4 and 20-25; and Col. 9, lines 31-64); (b) access control electronics 22 that is an activating signal transmitting circuit connected to wake-up circuit 26 and outputs an unlock/relock signal 34 to activate locking mechanism 14 (see Col. 6, lines 10-14 and Col. 10, lines 17-25); (c) power supply 20 that is a hard-wired AC power supply connected to wake-up circuit 26 (see Col. 5, lines 28-30 and 35-38); and (d) reader electronics 24 that is an electromagnetic signal transceiver connected to wake-up circuit 26 via a software-controlled switch 48 and receives card data 13 (i.e., a remote control signal) from proximity card 12 (see Col. 6, lines 4-10 and 15-36; and Col. 9, lines 46-60). Rodenbeck further teaches that locking mechanism 14 includes (e) an unlock/relock signal 34 (i.e., an activating signal) receiving circuit that receives unlock/relock signal 34 (see Col. 6, lines 10-14 and Col. 10, lines 17-35); and (f) a power supply circuit that provides unlock/relock signal 34 (which is also an operating voltage) from access control electronics 22 to locking mechanism 14 (see Col. 10, lines 20-35). Though Rodenbeck fails to expressly teach that locking mechanism 14 includes (g) a main control circuit connected to locking mechanism's unlock/relock signal 34 receiving circuit and power supply circuit, locking mechanism 14 must include a main control circuit, such as a solenoid or motor control, in order to lock and unlock a door upon receiving unlock/relock signal 34 (see Col. 6, lines 10-14 and Col. 10, lines 17-35). Finally, as shown in Fig. 2, Rodenbeck's locking mechanism 14's power is activated to level 160 when locking mechanism 14 receives unlock/relock signal 34 from proximity card detection system 10 (see Col. 10, lines 20-35).

Referring to claim 13, Rodenbeck's method comprises (a) proximity card detection system 10 receiving card data 13 (i.e., a remote signal) from proximity card 12 (see Col. 6, lines 4-10 and 15-36; and Col. 9, lines 46-64); (b) proximity card detection system 10 issuing

unlock/relock signal 34 to locking mechanism 14 (see Col. 6, lines 10-14 and Col. 10, lines 17-20); and (c) locking mechanism 14 activating based on the reception of unlock/relock signal 34 (see Col. 6, lines 10-14 and Col. 10, lines 20-35).

8. Claims 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Lemelson (US 4,189,712).

Referring to claim 13, Lemelson's system, as shown in Figs. 1, 7, and 8, comprises (1) ring 11 that functions as a control server since ring 11 transmits activating signals to lock assembly 12 in order to unlock lock 21L (see Col. 3, lines 33-55; Col. 4, lines 38-46; Col. 7, lines 33-65; and Col. 8, lines 1-49); and (2) an electrical lock formed by lock assembly 12, receptacle 13, code comparator 15, electronic memory 16, AND gate 17, motor/solenoid control 21, lock 21L, and power supply 22 (see Col. 3, lines 41-68; Col. 4, lines 1-32; Col. 7, lines 33-68; and Col. 8, lines 1-49). In the embodiment shown in Fig. 7, Lemelson's method comprises (a) ring 11 receiving an energy field (i.e., a remote signal) via pickup coil 86 (see Col. 7, lines 33-56); (b) ring 11 issuing an activating signal to lock assembly 12's photosensors 74A-74D (see Col. 7, lines 52-68 and Col. 8, line 1); and (c) electrical lock activating lock 21L's lock servo via motor/solenoid control 21 (see Col. 3, lines 51-55 and Col. 8, lines 1-4).

Regarding claim 14, in the embodiment shown in Fig. 8, Lemelson teaches that ring 11's activating signal is a static magnetic field (see Col. 8, lines 5-49).

Regarding claim 15, as explained in the previous rejection of claim 13, Lemelson teaches that ring 11's activating signal is a light signal (see Col. 7, lines 33-68 and Col. 8, lines 1-4).

Regarding claim 16, Lemelson teaches that ring 11's activating signal is a sound signal that is received by a terminal that contains acoustically coupled means for converting ring 11's tone signals to sounds and then to electrical signals by a transducer, wherein the electrical

signals are used to enable other devices as described, which is understood to include Lemelson's electric lock (see Col. 16, lines 51 and 61-68).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frolov et al. (US 6,714,118) in view of Wenkman et al. (WO 00/77330 A1).

Referring to claim 1, Frolov's modular electronic lock system 10, as shown in Figs. 1A and 1B comprises control module 30 (i.e., a control server) and electromechanical lockset 16 (see Col. 4, lines 2-24). Per Frolov, communication between control module 30 and lockset 16 can be achieved using wireless technology, as shown in Fig. 12A (see Col. 5, lines 45-61). Referring to Figs. 12 and 12A, Frolov teaches that control module 30, which is connected to input device 40, comprises (a) microprocessor 30*a* (i.e., server control circuit) that controls all elements in control

module 30 (see Col. 6, lines 30-38); (b) optical or radio transmitter 34*a*, 32*a* that is connected to microprocessor 30*a* and outputs an activating signal to activate lockset 16 (see Col. 5, lines 45-61 and Col. 6, lines 34-38); (c) power supply 30*c* that must be connected to microprocessor 30*a* to supply an operating voltage to control module 30 (see Col. 6, lines 30-32); and (d) input device 40 (see Col. 7, lines 36-46). As shown in Fig. 12A, Frolov's lockset 16 includes (e) optical or radio receiver 34*b*, 32*b* that receives an activating signal. Though not expressly taught, Frolov's lockset 16 must have (f) a main control circuit connected to optical or radio receiver 34*b*, 32*b* in order to process the optical or radio activating signal received from control module 30 and to activate lockset 16 (see Col. 5, lines 53-61 and Col. 6, lines 34-38); and (g) a power supply circuit connected to the main control circuit in order for optical or radio receiver 34*b*, 32*b* to receive control module 30's optical or radio activating signal and to activate lockset 16. Per Frolov, control module 30 only activates lockset 16 via optical or radio transmitter 34*a*, 32*a* when a valid input is received from input device 40 (see Col. 5, lines 45-61 and Col. 6, lines 34-38); thus Frolov's lockset 16 is powered when optical or radio receiver 34*b*, 32*b* receives control module 30's optical or radio activating signal. Frolov, however, is silent on (1) control module 30's power supply 30*c* being an AC power supply, and (2) input device 40 being an electromagnetic signal transceiver to receive a remote control signal.

In an analogous art, as explained in the previous 35 USC §102(b) rejection of claim 1, Wenkman teaches all the limitations of the claim.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Frolov's system as taught by Wenkman because (1) using an AC power supply eliminates the need to replace control module 30's battery, and (2) using an

input device 40 that is an electromagnetic signal transceiver enables the system to use transponder cards.

Regarding claim 5, Frolov teaches that control module 30, as shown in Fig. 12, includes power supply 30*c*, which is a battery (see Col. 6, lines 30-32). It is understood that the battery is a dry battery. In the wireless embodiment shown in Fig. 12A and as explained in the previous rejection of claim 1, lockset 16, which includes a main control circuit and optical or radio receiver 34b, 32b, must also include a power supply circuit connected to the main control circuit in order for optical or radio receiver 34*b*, 32*b* to receive control module 30's optical or radio activating signal and to activate lockset 16. Because Frolov teaches power supply 30*c* being a battery, it is understood that lockset 16's power supply is also a dry battery.

12. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frolov et al. (US 6,714,118) in view of Wenkman et al. (WO 00/77330 A1) as applied to claim 1 above, and further in view of Hirano et al. (US 4,973,958).

Regarding claim 2, Frolov, as modified by Wenkman, teaches that communication between control module 30 and lockset 16 is accomplished using wireless technology and that known methods of short distance wireless communication include infrared (IR), laser, and radio frequency (RF) systems (see Col. 5, lines 45-53). Frolov fails to suggest control module 30 sending an activating signal to lockset 16 via induction (i.e., a static magnetic field).

As shown in Fig. 2, Wenkman's control server include switch 23 and AC power signal 24, which form a magnetic field generating circuit having (1) an input terminal connected to local controller 20 via line 22 and (2) an output terminal connected to primary winding 26, which is an induction coil (see page 8, lines 4-6). Still referring to Fig. 2, Wenkman's lock mechanism 47 includes secondary winding 34, rectifier 36, and filter capacitor 38 that form an

activating signal receiving circuit. Per Wenkman, when the control server receives a remote signal, local controller 20 connects AC power signal 24 to primary winding 26 via switch 23, thereby generating a static magnetic field that is detected by lock mechanism 46's secondary winding 34 and activates solenoid or motor 40 (see page 8, lines 4-6 and 10-20; page 10, lines 30-34; and page 11, lines 1 and 16-20).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Frolov's system as taught by Wenkman because Frolov teaches that communication between a control server and an electrical lock is accomplished using short distance wireless communication, such as IR or RF signals, and Wenkman teaches that communication between a control server and an electrical lock is accomplished using induction, which is also a type of short distance wireless communication. Frolov and Wenkman, however, fail to teach that the activating signal receiving circuit has a signal amplifier having an input terminal connected to lockset 16's main control circuit and an output terminal connected to secondary winding 34.

In an analogous art, as shown in Figs. 1-5, Hirano's keyless entry system comprises (1) an electrical lock formed by controller 200, antenna device 204, and actuator 302 and (2) wireless transmitter 100 or control server (see Col. 3, lines 55-66; Col. 4, lines 1-16; and Col. 8, lines 23-29). Per Hirano, wireless transmitter 100, as shown in Figs. 2 and 4, includes (a) microprocessor 104 that controls all elements in wireless transmitter 100 (see Col. 4, lines 35-42); (b) modulator circuit 108 and carrier wave generator circuit 110 that form an activating signal transmitting circuit connected to microprocessor 104 and output an activating signal indicating of transmitter 100's unique code to activate actuator 302 (see Col. 4, lines 55-68; Col. 5, lines 1-5; and Col. 8, lines 13-29); (c) lithium cell 116 that supplies an operating voltage for transmitter 100

(see Col. 6, lines 18-21); and (d) inductive loop antennas 102*a* and 102*b*, demodulator circuit 106, and modulator circuit 108 that form an electromagnetic signal transceiver connected to microprocessor 104 and receive a demand signal (i.e., a remote control signal) from controller 20 (see Col. 4, lines 32-44 and 66-68; and Col. 6, lines 1-7). Hirano's electrical lock, as shown in Figs. 3 and 5, comprises (e) microprocessor 202 that controls all elements in the electrical lock (see Col. 5, lines 6-31; Col. 6, lines 52-68; and Col. 7, lines 1-3); (b) demodulator 206 that is an activating signal receiving circuit connected to microprocessor 202 and receives transmitter 100's unique code-containing signal (see Col. 5, lines 10-18); and (c) a power supply that must be connected to microprocessor 202 to provide an operating voltage for the electrical lock (see Fig. 5). Hirano discloses that controller 200 provides an output control signal to actuator driver circuit 214 to activate actuator 302 when controller 200 receives transmitter 100's unique code-containing signal (see Col. 5, lines 10-24 and Col. 8, lines 13-29). Regarding claim 2, Hirano's activating signal transmitting circuit has modulator circuit 108 and carrier wave generator circuit 110 that form a magnetic field generating circuit, as shown in Figs. 2 and 4, wherein modulator circuit 108's input terminal is connected to microprocessor 104, and modulator circuit 108's output terminal is connected to loop antenna 102*b* (see Col. 4, lines 46-48 and 55-68; and Col. 5, lines 1-5 and 32-44). Hirano's activating signal receiving circuit, as shown in Fig. 5, includes demodulator 206, which has a signal amplifier that has an output terminal to send the received activating signal to microprocessor 202 and an input terminal connected to loop antenna 204 (see Col. 5, lines 10-24 and 45-53; and Col. 6, lines 28-55). Per Hirano, when transmitter 100 receives a demand signal, transmitter 100's modulator circuit 108 and carrier wave generator circuit 110 generate a static magnetic field that is detected by loop antenna 204,

causing microprocessor 202 to activate actuator 302 (see Col. 4, lines 46-68; Col. 5, lines 1-31 and 66-68; Col. 6, lines 1-13 and 52-55; and Col. 8, lines 13-29).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Frolov and Wenkman's system as taught by Hirano because an activating signal receiving circuit having a signal amplifier connected to the input terminal of lockset 16's main control circuit and to secondary winding 34's output terminal offers a plurality of advantages: (1) control module 30's effective radiated power can be reduced since the activating signal is amplified by the activating signal receiving circuit's signal amplifier, thereby conserving power at control module 30; and (2) lockset 16's performance is improved since the signal amplifier enables the main control circuit to process weaker activating signals.

Regarding claim 6, as explained in the previous rejection of claim 5, Frolov, as modified by Wenkman and Hirano, teaches that lockset 16's power supply is a dry battery.

13. Claims 3, 7, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frolov et al. (US 6,714,118) in view of Wenkman et al. (WO 00/77330 A1) as applied to claim 1 above, and further in view of Pinnow (US 4,573,046).

Regarding claims 3, 9, and 11, Frolov, as modified by Wenkman, teaches that control module 30 includes optical transmitter 34*a* (i.e., an activating signal transmitting circuit) (see Col. 5, lines 45-61 and Col. 6, lines 30-38); thus optical transmitter 34*a* must include a light signal transmitting circuit, and optical receiver 34*b* must include a light signal receiving circuit. Frolov and Wenkman, however, are silent on (1) optical receiver 34*b* also having a signal amplifier (as called for in claim 3) and (2) lockset 16 being powered by a solar energy circuit (as called for in claims 9 and 11).

In an analogous art, Pinnow teaches a universal electronic locking system, as shown in Figs. 1 and 2, comprising (1) a signal transmitting unit 10 (i.e., a control server) and (2) electrical locking system 40 (see Col. 2, lines 55-67; Col. 3, lines 14-63; Col. 7, lines 10-15 and 25-40; and Col. 8, lines 42-60). As shown in Figs. 1 and 1A, Pinnow's signal transmitting unit 10 comprises (a) controller 25 and memory forming a server control circuit (see Col. 8, lines 15-20); (b) light source 32 forming an activating signal transmitting circuit connected to controller 25 and outputting a signal containing a valid code (i.e., an activating signal) to activate locking system 40 (see Col. 2, lines 55-64; Col. 3, lines 45-63; Col. 4, lines 1-21; Col. 7, lines 35-47; and Col. 8, lines 15-41); and (c) a battery (see Col. 3, lines 49-58 and Col. 7, lines 37-40). Pinnow's locking system 40, as shown in Figs. 2-4, comprises (d) signal processor 52 and memory 54 forming a main control circuit (see Col. 9, lines 11-17 and 32-52); (e) photodetector 48 and amplifier 50 forming an activating signal receiving circuit that is connected to signal processor 52 and receives signal transmitting unit 10's signal (see Col. 8, lines 42-60 and Col. 9, lines 11-14 and 32-40); and (f) a power supply circuit (see Col. 5, lines 14-20 and 56-61). As called for in claims 9 and 11, Pinnow teaches that the power supply circuit is a battery or a solar energy circuit (see Fig. 3, battery 68; Fig. 4, solar cell 74 and capacitor 76; Col. 5, lines 14-20 and 56-61; and Col. 10, lines 11-25).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Frolov and Wenkman's system as taught by Pinnow because (1) optical receiver 34*b* having a signal amplifier (as called for in claim 3) amplifies the detected signal prior to processing by signal processor 52, thereby improving signal processor 52's ability to process the detected signal; and (2) lockset 16 being powered by a solar energy circuit (as

called for in claims 9 and 11), eliminates lockset 16 having a battery that requires periodic replacement.

Regarding claim 7, as explained in the previous rejection of claim 5, Frolov, as modified by Wenkman and Pinnow, teaches that lockset 16's power supply is a dry battery.

14. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frolov et al. (US 6,714,118) in view of Wenkman et al. (WO 00/77330 A1) as applied to claim 1 above, and further in view of Gram (US 3,665, 475).

Regarding claim 4, Frolov, as modified by Wenkman, teaches that communication between control module 30 and lockset 16 is accomplished using wireless technology, and that known methods of short distance wireless communication include IR, laser, and RF systems (see Col. 5, lines 45-53). Frolov fails to suggest that control module 30's activating signal is a sound signal.

In an analogous art, Gram teaches a remote control system for security systems comprising (a) a transmitter (i.e., control server) and (b) a receiver connected to a utilization device 36 (see Figs. 1 and 2; Col. 1, lines 11-14; Col. 4, lines 16-35; and Col. 6, lines 65-75). Gram teaches that utilization device 36 takes a variety of forms. Because remotely controlled electrical locks are well known, it is understood that Gram's receiver and utilization device 36 form an electrical lock. As shown in Fig. 1, Gram's transmitter includes (a) switch S1 forming a server control circuit that controls all elements of the transmitter by supplying power to the elements (e.g., audio tone generator 10, periodic pulse gate 12, and radio frequency generator 14) (see Col. 2, lines 60-69 and Col. 3, lines 43-45); (b) audio tone generator 10, periodic pulse gate 12, and RF generator 14 forming an activating signal transmitting circuit that is connected to switch S1 and outputs an activating signal to activate utilization device 36 (see (see Col. 2, lines 60-69;

Col. 3, lines 43-75; and Col. 4, lines 1-35); and (c) battery 16 (see Col. 2, lines 60-69 and Col. 3, lines 45-47). Gram's electrical lock, as shown in Fig. 3, comprises (d) audio tone processor 28, tone burst and noise discriminator 30, gate 32, and switch 34 forming a main control circuit that controls utilization device 36 (see Col. 4, lines 16-35); (e) RF amplifier-detector 22 and audio amplifier 24 forming an activating signal receiving circuit that is connected to the main control circuit and receives the transmitter's activating signal (see Col. 4, lines 16-29); and (f) a power supply circuit that must be connected to the receiver and utilization device 36 in order for the receiver to receive and process the transmitter's activating signal and actuate utilization device 36 (see Col. 4, lines 16-35). As called for in claim 4, Gram's activating signal is an RF carrier signal modulated by an audio tone signal; thus Gram's activating signal is a sound signal. As shown in Fig. 1, Gram's activating signal transmitting circuit comprises a sound signal transmitting circuit formed by audio tone generator 10, periodic pulse gate 12, and RF generator 14, and as shown in Fig. 3, Gram's activating signal receiving circuit comprises a sound signal receiving circuit formed by RF amplifier detector 22 and audio amplifier 24 (i.e., sound amplifier).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Frolov and Wenkman's system as taught by Gram because undesired activation of lockset 16 by stray electromagnetic signals is prevented by (1) a control module 30 that transmits an activating signal by modulating an RF carrier signal with an audio tone signal and (2) a lockset 16 that has an activating signal receiving circuit with a sound amplifier (see Gram, Col. 1, lines 17-47).

Regarding claim 8, as explained in the previous rejection of claim 5, Frolov, as modified by Wenkman and Gram, teaches that lockset 16's power supply is a dry battery.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frolov et al. (US 6,714,118) in view of Wenkman et al. (WO 00/77330 A1) and Hirano et al. (US 4,973,958) as applied to claim 2 above, and further in view of Pinnow (US 4,573,046).

Regarding claim 10, as explained in the previous rejection of claim 6, Frolov, as modified by Wenkman and Hirano, teaches that lockset 16 includes a power supply circuit but fails to specify that the power supply circuit is a solar energy circuit.

In an analogous art, as explained in the previous rejection of claims 3, 7, 9, and 11, Pinnow teaches that electrical locking system 40's power supply circuit is a battery or a solar energy circuit in Fig. 4 (see Fig. 3, battery 68; Fig. 4, solar cell 74 and capacitor 76; Col. 5, lines 14-20 and 56-61; and Col. 10, lines 11-25).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Frolov, Wenkman, and Hirano's system as taught by Pinnow because lockset 16 being powered by a solar energy circuit eliminates lockset 16 having a battery that requires periodic replacement.

16. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frolov et al. (US 6,714,118) in view of Wenkman et al. (WO 00/77330 A1) and Gram (US 3,665, 475) as applied to claim 4 above, and further in view of Pinnow (US 4,573,046).

Regarding claim 12, as explained in the previous rejection of claim 6, Frolov, as modified by Wenkman and Gram, teaches that lockset 16 includes a power supply circuit but fails to specify that the power supply circuit is a solar energy circuit.

In an analogous art, as explained in the previous rejection of claims 3, 7, 9, and 11, Pinnow teaches that electrical locking system 40's power supply circuit is a battery or a solar

energy circuit in Fig. 4 (see Fig. 3, battery 68; Fig. 4, solar cell 74 and capacitor 76; Col. 5, lines 14-20 and 56-61; and Col. 10, lines 11-25).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Frolov, Wenkman, and Gram's system as taught by Pinnow because lockset 16 being powered by a solar energy circuit eliminates lockset 16 having a battery that requires periodic replacement.

Allowable Subject Matter

17. Claim 17 is allowed. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or suggest a combination electrical lock device comprising an electrical lock and a control server, wherein the control server comprises (a) a server control circuit, (b) a first electromagnetic signal transceiver connected to the server control circuit to receive a remote control signal, and (c) an AC power supply circuit connected to the server control circuit to supply an operating voltage for the control server, and wherein the electrical lock comprises (d) a main control circuit, (e) a second electromagnetic signal transceiver connected to the main control circuit to output a query signal to detect whether the control server has received the remote signal, and (f) a power supply circuit connected to the main control circuit.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Martin et al. (US 5,979,754) teach a door lock control apparatus comprising an electrical lock and a control server.
- Yulkowski et al. (US 6,259352) teach a door lock system comprising an electrical lock and a control server.

- Kim et al. (US 2003/0048009 A1) teach an electronic locking apparatus, wherein the control server includes a power unit, a controller, and an activating signal transmitting circuit, and the electrical lock includes a power unit, a controller, and an activating signal receiving circuit.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (571) 272-3062. The examiner can normally be reached on Tuesdays, 1:00-2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (571) 272-7308. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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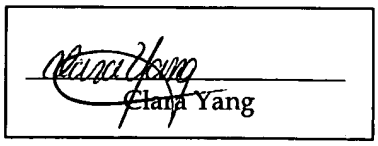
30 October 2006


Clara Yang